

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/010999

International filing date (day/month/year)
09.06.2005

Priority date (day/month/year)
11.06.2004

International Patent Classification (IPC) or both national classification and IPC
C08G63/688, C08G63/06, C08G63/91

Applicant
CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Niaounakis, M

Telephone No. +31 70 340-3818



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

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Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1,2,5-11
	No: Claims	3,4
Inventive step (IS)	Yes: Claims	1,2,5-11
	No: Claims	3,4
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents (D1-D3), especially to the passages referred to in the Search Report; the numbering will be adhered to in the rest of the procedure:

- D1: WO 2004/038512 A (CANON KABUSHIKI KAISHA; MIHARA, CHIEKO; YANO, TETSUYA; KOZAKI, SHINYA;) 6 May 2004 (2004-05-06)
- D2: WO 2004/044213 A (CANON KABUSHIKI KAISHA; KENMOKU, TAKASHI; YANO, TETSUYA; MIHARA, CHIEK) 27 May 2004 (2004-05-27)
- D3: EP-A-1 336 635 (CANON KABUSHIKI KAISHA) 20 August 2003 (2003-08-20)

D1 relates to a polyhydroxyalkanoate copolymer which contains a unit having a carboxyl group on a side chain which is similar to the side-chain of the polyhydroxyalkanoate of the present application (formula 5 of claim 3). In addition, the main-chain of D1 corresponds to the formula (5) of claim 3 for the case $n=1$.

Therefore, the subject-matter of claim 3 is not considered to be novel (Article 33(2) PCT).

D2 relates to a polyhydroxyalkanoate copolymer which contains a unit having a vinyl group on a side-chain which is similar to the side-chain of the polyhydroxyalkanoate of the present application (formula 6 of claim 4). In addition, the main-chain of D2 corresponds to the formula (6) of claim 4 for the case $n=1$.

Therefore, the subject-matter of claim 4 is not considered to be novel (Article 33(2) PCT).

On the other hand, the subject-matter of claims 5-11 is considered to be novel and inventive (Article 33(1)(2)(3) PCT).

D3 relates to a polyhydroxyalkanoate which contains a unit having an amide group and a sulfonic acid group on a side-chain. However, the structure of the side-chain of the polyhydroxyalkanoate of D3 is different from the side-chain of the polyhydroxyalkanoate of

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the present application (formula 1 of claim 1) because it contains additionally a sulfide group (-S-).

Therefore, the subject-matter of claims 1 and 2 is considered to be novel and inventive (Article 33(1)(2)(3) PCT).

Furthermore, all claims fulfill the requirements of industrial applicability (Article 33(4) PCT).